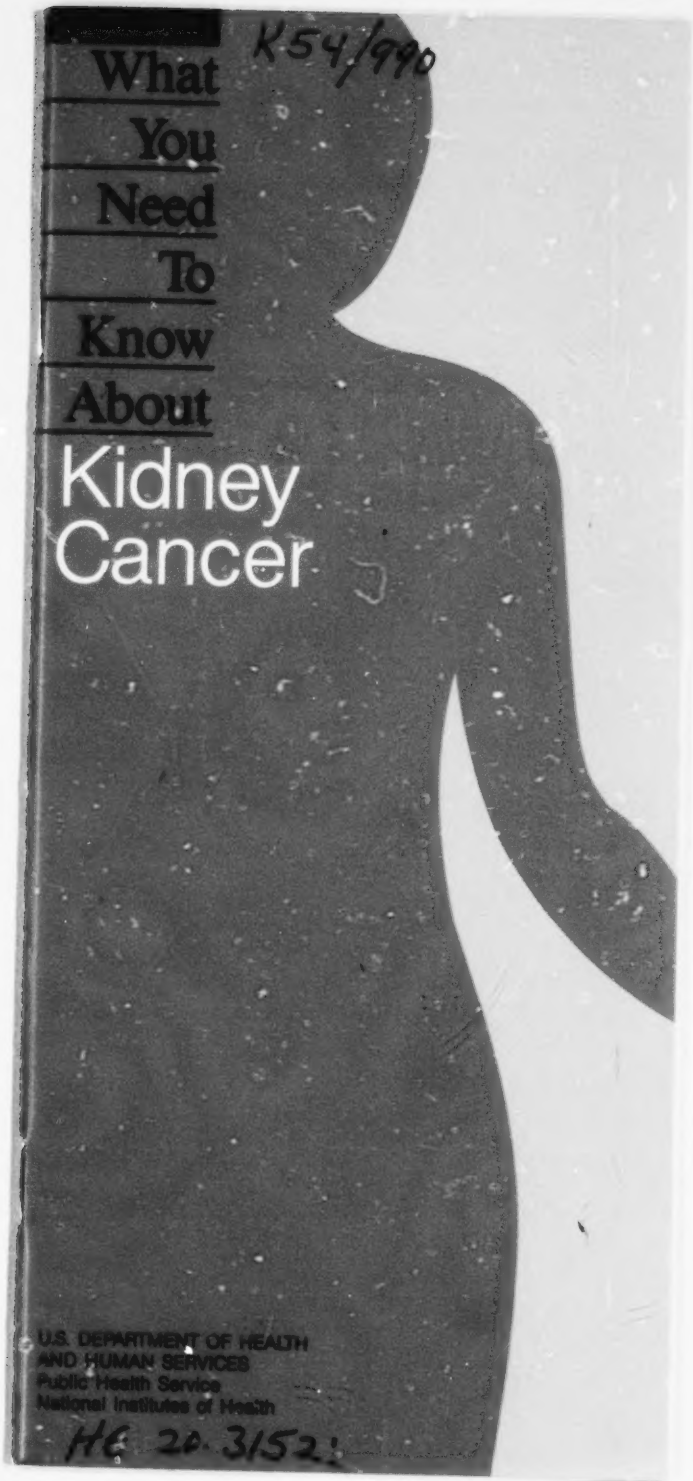
K54/990

# What You Need To Know About Kidney Cancer



U.S. DEPARTMENT OF HEALTH
AND HUMAN SERVICES
Public Health Service
National Institutes of Health

HE 20.3152:

READEX FICHE best copy available

Contents

The Kidneys 2
What Is Cancer? 3
Symptoms 4
Diagnosis 5
Treatment 6
Living With Cancer 11
The Promise of Cancer Research 14
Medical Terms 17
Resources 21
For Further Information 23

## What You Need To Know About Kidney Cancer

Each year, more than 23,000 Americans find out they have cancer of the kidney. The National Cancer Institute (NCI) has prepared this booklet to help patients and their families and friends better understand kidney cancer. We also hope it will encourage all readers to learn more about this disease.

This booklet has information on the symptoms, diagnosis, and treatment of kidney cancer. Other NCI booklets about cancer, its treatment, and living with the disease are listed on page 23. However, no booklet can answer all questions or take the place of talks with doctors, nurses, and other members of the health care team.

Throughout this booklet, words that may be new to readers are printed in *italics*. Definitions of these and other terms related to kidney cancer begin on page 17. For some words, a "sounds-like" spelling is also given.

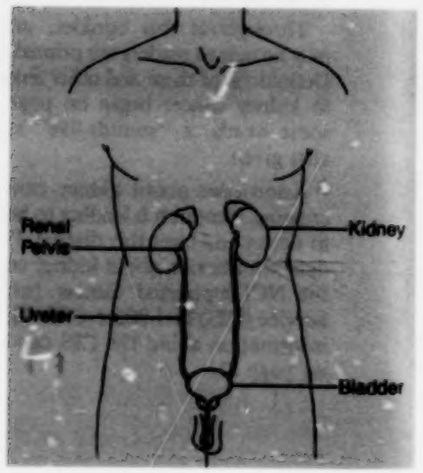
Knowledge about kidney cancer is increasing. Research is leading to better ways to detect and treat this disease. For up-to-date information about kidney cancer, call the NCI-supported Cancer Information Service (CIS) at 1-800-4-CANCER. More information about the CIS can be found on page 21.

## The Kidneys

The kidneys are part of the *urinary tract.* They are a pair of organs found just above the waist on each side of the spine.

The kidneys remove waste products from the blood and produce *urine.* As blood flows through the kidneys, they filter waste products, chemicals, and unneeded water from the blood. Urine collects in the middle of each kidney, an area called the *renal pelvis.* Urine then drains from the kidney through a long tube, the *ureter,* to the *bladder,* where it is stored.

The kidneys also make substances that help control blood pressure and regulate the formation of red blood cells.






## What Is Cancer?

*Cancer* is a group of diseases. More than 100 different types of cancer are known—and there are several types of kidney cancer. They all have one thing in common: cells become abnormal. These abnormal cells grow and destroy body tissue and can spread to other parts of the body.

Healthy cells that make up the body's tissues grow, divide, and replace themselves in an orderly way. This process keeps the body in good repair. If cells lose the ability to control their growth, they grow too rapidly and without any order. They form too much tissue. The mass of extra tissue is called a *tumor.* Tumors can be *benign* or *malignant.*

- Benign tumors are not cancer. They do not spread to other parts of the body and are seldom a threat to life. Benign tumors can usually be removed, and they are not likely to return.
- Malignant tumors are cancer. They can invade and destroy nearby healthy tissues and organs. Cancer cells can also break away from the tumor and enter the bloodstream and *lymphatic system.* That is how cancer can spread to other parts of the body. This spread is called *metastasis.* Cancer that spreads is the same disease, and the new tumors have the same name as the original, or primary, cancer.

In adults, most kidney cancers develop in the tissues that filter blood and produce urine. This type of cancer is called *renal cell cancer.* Cancer of the renal pelvis is

called *transitional cell carcinoma.* This disease is very much like the type of cancer that occurs in the bladder, and it is often treated like bladder cancer.

Childhood kidney cancer is different from kidney cancer in adults. The most common type of kidney cancer in children is Wilms' tumor. This disease is discussed in two other NCI booklets, *Young People With Cancer* and *Research Report: Adult Kidney Cancer and Wilms' Tumor.*

## Symptoms

The most common symptom of kidney cancer is blood in the urine. In some cases, a person can actually see the blood. It may be present one day and not the next. Also, traces of blood may be found in *urinalysis,* a urine test done as part of a regular medical checkup.

Another symptom of kidney cancer is a lump or mass that can be felt in the kidney area. The tumor may cause a dull ache or pain in the back or side. Less often, signs of a kidney tumor include high blood pressure or an abnormal number of red blood cells.

Symptoms may develop suddenly. However, as with other types of cancer, kidney cancer can cause a general feeling of poor health. People with this disease may feel tired, lose their appetite, and lose weight. Some have a fever that comes and goes.

These symptoms may be caused by cancer or by other, less serious problems such as an infection or a fluid-filled *cyst.* Only a doctor can tell for sure.



## Diagnosis

To diagnose kidney cancer, the doctor asks about the patient's personal and family medical history and does a complete physical exam. In addition to checking temperature, pulse, blood pressure, and other general signs of health, the doctor usually orders blood and urine tests and may do one or more of the exams described below. (If the doctor thinks the patient might have transitional cell carcinoma, other tests may be used.)

- An *IVP (intravenous pyelogram)* is a test that lets the doctor see the kidneys, ureters, and bladder on x-rays. The x-rays are taken after an injection of dye that shows up on the x-ray film.
- A *CT or CAT scan* is another x-ray procedure that gives detailed pictures of cross sections of the body. The pictures are created by a computer.
- *Ultrasound* is a test that sends high-frequency sound waves, which cannot be heard by humans, into the kidney. The pattern of echoes produced by these waves creates a picture called a sonogram. Healthy tissues, cysts, and tumors produce different echoes.
- An *arteriogram* is a series of x-rays of blood vessels. Dye is injected into a large blood vessel through a narrow tube called a *catheter.* X-rays show the dye as it moves through the network of smaller blood vessels around and in the kidney.
- *MRI (magnetic resonance imaging)* uses a very strong magnet linked to a computer to create pictures of cross sections of the kidney.

- A *nephrotomogram* is a series of x-rays of cross sections of the kidney. The x-rays are taken from several angles before and after injection of a dye that outlines the kidney.

If these tests suggest that a tumor is present, the doctor may confirm the diagnosis with a *biopsy*. A thin needle is inserted into the tumor to withdraw a sample of tissue. The tissue is examined under a microscope by a *pathologist* to check for cancer cells.

When a diagnosis of kidney cancer is made, the doctor needs to know the extent, or stage, of the disease. Because kidney cancer may spread to the bones, lungs, liver, or brain, *staging* procedures may include special x-rays and tests to check these organs.

## Treatment

Treatment for kidney cancer depends on the location and size of the tumor and whether the cancer has spread to other organs. The doctor also considers the person's age and general health to develop a treatment plan to fit the patient's needs.

### Planning Treatment

Before starting treatment, the patient might want a second doctor to review the diagnosis and treatment plan. There are a number of ways to get a second opinion:

- The patient's doctor can discuss the case with other doctors who treat kidney cancer. Names of doctors and up-to-date treatment information are available from NCI's computerized resource called PDQ. Many of these doctors conduct *clinical trials* (treatment studies) and have a special interest in kidney cancer.



(Additional information about PDQ is found on page 16.)

- Patients can get the names of doctors to talk with from the local medical society or a nearby hospital or medical school.
- The Cancer Information Service, at 1-800-4-CANCER, can answer questions about kidney cancer and its treatment and also may be able to help patients locate doctors for a second opinion.

### Treatment Methods

Kidney cancer is treated with *surgery, embolization, radiation therapy, hormone therapy, biological therapy,* or *chemotherapy.* The doctor may use just one treatment method or combine them, depending on the patient's needs. In many cases, the patient is referred to doctors who specialize in different kinds of cancer treatment. Sometimes, several specialists work together as a team.

Most kidney cancer patients have surgery, an operation called *nephrectomy.* In some cases, the surgeon removes the whole kidney or just the part of the kidney that contains the tumor. More often, the surgeon removes the whole kidney along with the *adrenal gland* and the fat around the kidney. Also, nearby *lymph nodes* may be removed because they are one of the first places where kidney cancer spreads. Finding cancer cells in the lymph nodes means there may be cancer elsewhere in the body.

In embolization, a substance is injected to clog the renal blood vessels. The tumor shrinks because it does not get the blood supply it needs to grow. In some cases, embolization makes surgery easier. When surgery is not possible, this treatment may help reduce pain and bleeding.

Radiation therapy (also called radiotherapy) uses high-powered rays to damage cancer cells and stop them from growing. Radiation therapy may be used to shrink a tumor before surgery or to kill cancer cells that may remain in the body after surgery. For patients who cannot have surgery, radiation therapy may be used instead. Also, radiation may be used to treat kidney cancer that has spread to the bones or other parts of the body.

The radiation comes from a large machine. The patient receives radiation therapy 5 days a week for 5 to 6 weeks. This schedule helps protect normal tissue by spreading out the total dose of radiation. The patient doesn't need to stay in the hospital for radiation therapy.

Surgery, embolization, and radiation therapy are forms of *local therapy.* They affect only the cells in the treated area. Hormone therapy, biological therapy, and chemotherapy are types of *systemic therapy.* The substances travel through the bloodstream and affect cells all over the body.

Some kidney cancers may be treated with *hormones* to control the growth of cancer cells. Some hormones are taken by mouth; others are given by injection. Patients do not need to be in the hospital for their treatment. This kind of treatment helps a small number of patients with advanced kidney cancer, especially when the disease has spread to the lungs.

Biological therapy is a new way of treating kidney cancer. This treatment attempts to improve the way the body's *immune system* fights disease. Interleukin-2 and interferon are two forms of biological therapy being studied to treat advanced kidney cancer. Doctors are also exploring the benefits of using biological therapy after surgery for early stage kidney cancer. This additional treatment is called *adjuvant therapy.* Doctors are trying to find out whether adjuvant biological therapy can prevent the cancer from recurring by killing undetected cancer cells that may remain in the body. Most patients having biological therapy must stay in the hospital so that the effects of their treatment can be watched.

Chemotherapy uses drugs to kill cancer cells. Chemotherapy has not been very effective against kidney cancer, but researchers are studying new drugs and new drug combinations that may prove to be useful.

**Side Effects of Treatment**

The methods used to treat kidney cancer are very powerful. It is hard to limit the effects of treatment so that only cancer cells are destroyed; healthy cells may also be damaged. That's why treatment often causes unpleasant side effects. Side effects depend on the type of treatment and the part of the body being treated.

Nephrectomy is major surgery. For a few days after the operation, most patients need medicine to relieve pain. Discomfort may make it difficult to breathe deeply, and patients have to do special coughing and breathing exercises to help keep their lungs clear. Patients may need *IV (intravenous)* feedings and fluids for several days before and after the operation. Nurses will keep track of the amount of fluid the patient takes in and the amount of urine produced. The remaining kidney takes over the work of the one that was removed.

Embolization can cause pain, fever, nausea, or vomiting. These problems are treated with medicine. Often, patients also need intravenous fluids.

During radiation therapy, the patient may become very tired as the treatment continues. Resting as much as possible is important. Skin reactions (redness or dryness) in the treated area are also common, and the skin should be protected from the sun. Good skin care is important at this time, but the patient should *not* use any lotion or cream on the skin without the doctor's advice. Radiation therapy may cause nausea, vomiting, and diarrhea. Usually, the doctor can suggest certain foods and medicines to ease these problems.

The side effects of hormone therapy are usually mild. *Progesterone* is the hormone most often used to treat kidney cancer. Drugs containing progesterone generally cause few side effects, though some patients may retain fluid and gain weight.

The side effects caused by biological therapies vary with the type of treatment. Often, these treatments cause flu-like symptoms such as chills, fever, muscle aches, weakness, loss of appetite, nausea, vomiting, and diarrhea. Sometimes patients get a rash with dry, itching skin. Patients often feel very tired after treatment. In addition, interleukin-2 can cause the patient to retain fluid. These problems can be severe, and most patients need to stay in the hospital during treatment.

Loss of appetite can be a serious problem for patients during their treatment for cancer. Patients who eat well may be better able to withstand the side effects of their treatment, so good nutrition is an important part of the treatment plan. Eating well means getting enough calories to prevent weight loss and having enough protein to regain strength and rebuild normal tissues. Many patients find that eating several small meals and snacks during the day works better than trying to have three large meals.



The side effects that patients have during cancer treatment vary for each person. They may even be different from one treatment to the next. Doctors try to plan therapy to keep problems to a minimum. Fortunately, most side effects are temporary. Doctors, nurses, and dietitians can explain the side effects of cancer treatment and can suggest ways to deal with them. Helpful information about cancer treatment and coping with side effects is given in the NCI publications *Radiation Therapy and You, Managing Interleukin-2 Therapy,* and *Eating Hints.*

**Followup Care**

Regular followup is very important after treatment for kidney cancer. The doctor will continue to check the patient closely to be sure that the cancer has not returned. Checkups may include exams, chest x-rays, and lab tests. The doctor sometimes orders scans (special x-rays) and other tests, too.

## Living With Cancer

The diagnosis of kidney cancer can change the lives of cancer patients and the people who care about them. These changes can be difficult to handle. It's natural for patients and their families and friends to have many different and sometimes confusing emotions.

At times, patients and their loved ones may feel frightened, angry, or depressed. These are normal reactions when people face a serious health problem. Others in the same situation have found that they cope with their emotions better if they can talk openly about the illness and their feelings with those close to them. Sharing feelings

can help everyone feel more at ease, opening the way for others to show their concern and offer their support.

Concerns about what the future holds—as well as worries about tests, treatments, a hospital stay, and medical bills—are common. Talking with doctors, nurses, or other members of the health care team may help to calm fears and ease confusion. Patients can take an active part in decisions about their medical care by asking questions about kidney cancer and their treatment choices. Patients often find it helpful to write down questions to ask the doctor as they think of them. Taking notes during visits to the doctor helps them remember what was said. It also helps to take a family member or friend along to the physician. Patients should ask the doctor to explain anything that is not clear.

Patients have many important questions, and the doctor is the best person to answer them. Most people ask about the extent of their cancer, how it can be treated, and how successful the treatment is likely to be.

Doctors often talk about "surviving" cancer, or they may use the term "remission" rather than "cure." They use these terms because cancer can recur. It is natural for patients to be concerned about their future. Sometimes they use statistics to try to figure out their chance of being cured.

It is important to remember, however, that statistics are averages. They are based on the experiences of large numbers of patients, and no two cancer patients are alike. Only the doctor who takes care of the patient knows enough about his or her case to discuss the chance of recovery *(prognosis).*

These are some other important questions to ask the doctor:



- What are my treatment choices?
- What are the benefits of treatment?
- What are the risks and side effects of treatment?
- If I have pain, how will you help me?
- Will I need to change my normal activities? For how long?
- Can I keep working during treatment?
- How often will I need to have checkups?

The doctor is the best person to give advice about treatment, working, or limiting daily activities. Patients may also want to discuss concerns about the future, family relationships, and finances. If it is hard to talk with the doctor about feelings or other personal matters, it may be helpful to speak with a nurse, social worker, counselor, or member of the clergy.

Sometimes patients who have been treated for cancer are concerned that the changes in their lives and the changes to their bodies will affect the way other people feel about them. They may worry about holding a job, caring for their family, or starting new relationships.

Learning to live with the changes brought about by kidney cancer is easier for patients and those who care about them when they have helpful information and support services. Many patients feel that it also helps to talk with others who are facing problems like theirs. They can meet other cancer patients through self-help and support groups. Often, a social worker at the hospital or clinic can suggest local and national groups that will help with rehabilitation, emotional support, financial aid, transportation, or home care.

The American Cancer Society (ACS), for example, is a nonprofit organization that has many services for patients and their families. Local ACS offices are listed in the white pages of the telephone directory. The address and telephone number of the national headquarters are on page 22.

Living with any serious disease can be difficult and challenging. The public library is a good source of books and articles on living with cancer. Cancer patients and their families can also find helpful suggestions in the NCI booklet *Taking Time.*

Information about other programs and services is available through the Cancer Information Service. The toll-free number is 1-800-4-CANCER.

## The Promise of Cancer Research

Scientists at hospitals and medical centers all across the country are studying this disease. They are trying to learn what causes kidney cancer and how to prevent it. They also are looking for better ways to diagnose and treat it.

### Cause and Prevention

Kidney cancer affects men about twice as often as women. Most people who get this disease are over the age of 50.

At this time, the causes of kidney cancer are not well understood. Doctors can seldom explain why one person gets this disease and another doesn't. Kidney cancer is *not* contagious; no one can "catch" any type of cancer from another person.



Although scientists do not know exactly why kidney cancer develops, they have learned that some things *(risk factors)* increase a person's chance of getting this disease. For example, we know that smoking is a major risk factor for kidney cancer. Smokers are twice as likely to get this disease as nonsmokers. Scientists think cigarette smoking causes more than one-fourth of all kidney cancers in the United States. People who smoke are also more likely to get cancers of the lung, mouth, throat, larynx (voice box), esophagus, bladder, and pancreas.

Some people have developed kidney cancer after heavy, long-term use of a pain-killing drug called phenacetin. This drug is no longer sold in the United States.

Several studies suggest that the risk of developing kidney cancer may be higher than average among people with certain jobs. Groups with increased risk include coke oven workers and those who work with asbestos. Scientists are trying to learn more about these workers, and they are studying other occupations as well.

Although scientists cannot yet explain why, research shows that being overweight can increase the chance of getting some types of cancer. Kidney cancer may be one of them. Maintaining ideal weight may reduce the risk of cancer and other diseases, including heart disease, diabetes, and high blood pressure.

### Detection and Diagnosis

Scientists are trying to find better ways to detect kidney cancer in an early stage, before it has begun to spread. For example, they are studying tumor markers, substances that may be present in abnormal

amounts in the blood or urine of a person with kidney cancer. Several of these markers have been studied, but no reliable marker has been found.

**Treatment**

The NCI is supporting many studies of new treatments for kidney cancer. When laboratory research shows that a new treatment method has promise, it is used to treat cancer patients in clinical trials. These trials are designed to answer scientific questions and to find out whether a new treatment is both safe and effective. Patients who take part in clinical trials make an important contribution to medical science and may have the first chance to benefit from improved treatment methods.

A person with kidney cancer who is interested in taking part in a trial should discuss this option with his or her doctor. *What Are Clinical Trials All About?* is an NCI booklet about treatment studies.

Doctors can learn about clinical trials through PDQ, a computerized resource of cancer treatment information. Developed by NCI, PDQ contains the latest information on studies being done around the country for most types of cancer. Doctors can use an office computer or the services of a medical library to get PDQ information. Cancer Information Service (CIS) offices also provide PDQ information and can tell doctors how to use PDQ on a regular basis. Patients and the public can also get PDQ information by calling the CIS.





*Adjuvant therapy:* Treatment given in addition to the primary treatment.

*Adrenal glands* (a-DREE-nal): A pair of small glands, one located on top of each kidney. The adrenal glands produce hormones that help control heart rate, blood pressure, the way the body uses food, and other vital functions.

*Arteriogram* (ar-TEER-ee-o-gram): An x-ray of blood vessels, which can be seen after an injection of a dye that shows up in the x-ray pictures.

*Benign* (bee-NINE): Not cancer; does not spread to other parts of the body.

*Biological therapy:* Treatment that stimulates the body's immune system to fight disease more effectively. Also called immunotherapy.

*Biopsy* (BY-op-see): The removal of a sample of tissue for examination under a microscope. This tells the doctor whether cancer cells are present. Removing tissue or fluid with a needle is called needle biopsy.

*Bladder:* The hollow organ that stores urine.

*Cancer:* A term for more than 100 diseases that have uncontrolled growth of abnormal cells. These abnormal (cancerous) cells can spread through the bloodstream and lymphatic system to other parts of the body.

*Carcinoma* (kar-sin-O-mah): Cancer that begins in the tissues that line or cover an organ.

*Catheter:* A slender, flexible tube used for draining or injecting fluids.

*Chemotherapy* (kee-mo-THER-a-pee): Treatment with anticancer drugs.

*Clinical trials:* Studies of new cancer treatments. Each study is designed to answer scientific questions and to find better ways to treat patients.

*CT* or *CAT scan:* An x-ray procedure that uses a computer to produce detailed pictures of cross sections of the body.

*Cyst* (sist): An abnormal sac within a tissue or organ, usually filled with fluid.

*Embolization* (em-bo-li-ZAY-shun): A treatment that clogs small blood vessels and blocks the flow of blood to a tumor. Also called infarction.

*Hormones:* Chemicals produced by glands in the body. Hormones control the way certain cells or organs act.

*Hormone therapy:* Treatment of cancer by removing, blocking, or adding hormones.

*Immune system* (i-MYOON): The complex group of organs and cells that defend the body against infection or disease.

*IV (intravenous)* (in-tra-VEE-nus): Injected in a vein.

*IVP (intravenous pyelogram)* (in-tra-VEE-nus PY-e-lo-gram): An x-ray study of the urinary tract.

*Local therapy:* Treatment that affects a tumor and the cells in the area close to it.

*Lymph* (limf): The almost colorless fluid that bathes body tissues and carries cells that help fight infection.

*Lymph nodes:* Small, bean-shaped organs located along the lymphatic system. Nodes filter bacteria or cancer cells from lymph. Also called lymph glands.



*Lymphatic system* (lim-FAT-ik): The tissues and organs that produce, carry, and store cells that fight infection. This system includes the bone marrow, spleen, thymus, lymph vessels, and lymph nodes.

*MRI (magnetic resonance imaging)* (mag-NET-ik REZ-o-nans IM-a-jing): A diagnostic test that uses a magnet linked to a computer to create pictures of cross sections of the body.

*Malignant* (ma-LIG-nant): Cancerous; can spread to other parts of the body.

*Metastasis* (me-TAS-ta-sis): The spread of cancer from one part of the body to another. Cells in the metastatic (second) tumor are like those in the original (primary) tumor.

*Nephrectomy* (nef-REK-to-mee): Surgery to remove the kidney. Radical nephrectomy removes the kidney, the adrenal gland, nearby lymph nodes, and other surrounding tissue. Simple nephrectomy removes just the affected kidney. Partial nephrectomy removes the tumor, but not the entire kidney.

*Nephrotomogram* (nef-ro-TOE-mo-gram): A series of special x-rays of the kidneys. The x-rays are taken from different angles. They show the kidneys clearly, without the shadows of the organs around them.

*Oncologist* (on-KOL-o-jist): A doctor who specializes in treating cancer.

*Pathologist* (path-OL-o-jist): A doctor who identifies diseases by studying cells and tissues under a microscope.

*Progesterone* (pro-JES-ter-own): A female hormone.

*Prognosis* (prog-NO-sis): The probable outcome of a disease; the prospect of recovery.

*Radiation therapy* (ray-dee-AY-shun THER-a-pee): Treatment with high-energy rays from x-rays or other sources to kill cancer cells.

*Renal capsule:* The fibrous connective tissue that surrounds each kidney.

*Renal cell cancer:* Cancer that develops in the lining of the renal tubules, which filter the blood and produce urine.

*Renal pelvis:* The area at the center of the kidney. Urine collects here and is funneled into the ureter.

*Risk factor:* Something that increases a person's chance of getting a particular type of cancer.

*Staging:* The process of learning the extent of the tumor and whether the disease has spread from its original site to other parts of the body.

*Surgery:* An operation.

*Systemic* therapy: Treatment that reaches and affects cells all over the body.

*Transitional cell carcinoma:* Cancer that develops in the lining of the renal pelvis. This type of cancer also occurs in the ureter and the bladder.

*Tumor:* An abnormal mass of tissue.

*Ultrasound:* A test that bounces sound waves off tissues and changes the echoes into pictures (sonograms). The pictures are shown on a monitor like a TV screen. Different types of tissue reflect sound waves differently. This makes it possible to find abnormal growths and to tell a fluid-filled cyst from a solid mass.

*Ureter* (YUR-e-ter): The tube that carries urine from each kidney to the bladder.

*Urethra* (yur-EE-thra): The tube that empties urine from the bladder.



*Urinalysis:* A test that determines the content of the urine.

*Urinary tract* (YUR-in-air-ee): The organs of the body that produce and discharge urine. These include the kidneys, ureters, bladder, and urethra.

*Urine* (YUR-in): Fluid containing water and waste products. Urine is made by the kidneys, stored in the bladder, and leaves the body through the urethra.

*Urologist* (yur-OL-o-jist): A doctor who specializes in diseases of the urinary organs in females and the urinary and sex organs in males.

*X-ray:* High-energy radiation. It is used in low doses to diagnose diseases and in high doses to treat cancer.

## Resources

General information about cancer is widely available. Some helpful resources and booklets are listed below. Others may be available at a local library or from support groups in the community.

**Cancer Information Service**

1-800-4-CANCER

The NCI-supported Cancer Information Service (CIS) is a nationwide telephone service that answers questions from cancer patients and their families, health care professionals, and the public. Information specialists can answer questions and provide booklets on all aspects of cancer. They also may know about cancer-related services in local areas. Spanish-speaking staff members are available during daytime hours. By dialing the toll-free CIS number,

callers will be connected to the CIS office that serves their area.

**American Cancer Society**
1599 Clifton Road NE
Atlanta, GA 30329
404-320-3333

The American Cancer Society (ACS) is a national voluntary organization that provides free printed materials, offers a range of services to patients and their families, and carries out programs of research and education. Additional information about these services and activities can be obtained from the national headquarters or a local chapter (listed in the white pages of the telephone book under American Cancer Society).

**National Kidney Foundation**
30 East 33rd Street
New York, NY 10016
1-800-622-9010

The National Kidney Foundation is a voluntary agency concerned with the prevention and treatment of diseases of the kidneys and urinary tract. It supports research, support groups and other services for patients, and public education. Information is available from the national headquarters or a local chapter (listed in the white pages of the telephone book under National Kidney Foundation).

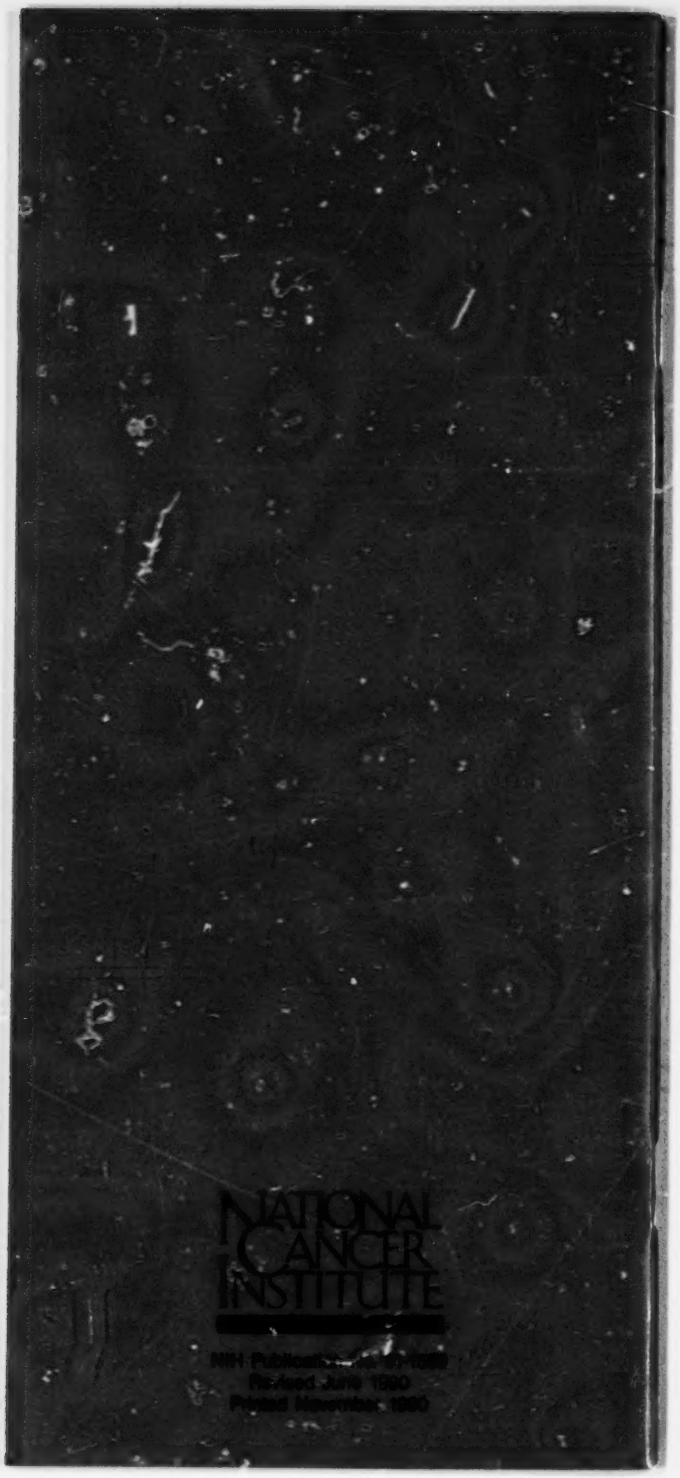


## For Further Information

Cancer patients, their families and friends, and others may find the following booklets useful. They are available free of charge by calling 1-800-4-CANCER or writing:

Office of Cancer Communications
National Cancer Institute
Building 31, Room 10A24
Bethesda, MD 20892

- *Advanced Cancer: Living Each Day*
- *Answers to Your Questions About Metastatic Cancer*
- *Eating Hints: Recipes and Tips for Better Nutrition During Cancer Treatment*
- *Managing Interleukin-2 Therapy*
- *Questions and Answers About Pain Control (also available from the American Cancer Society)*
- *Radiation Therapy and You: A Guide to Self-Help During Treatment*
- *Research Report: Adult Kidney Cancer and Wilms' Tumor*
- *Taking Time: Support for People With Cancer and the People Who Care About Them*
- *What Are Clinical Trials All About?*
- *When Cancer Recurs: Meeting the Challenge Again*


NATIONAL
CANCER
INSTITUTE